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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/788,648	02/21/2001	Tetsuo Suzuki	0303-0441P	7080

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EXAMINER	
KIBLER, VIRGINIA M	

ART UNIT	PAPER NUMBER
2623	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/788,648	SUZUKI ET AL.	
	Examiner	Art Unit	
	Virginia M Kibler	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☒ Claim(s) *11-12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment received on 3/1/04 has been entered. Claims 1-12 remain pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodrich et al. (5,823,356) in view of Fowlkes (3,743,091) and further in view of Mahdavieh et al. (5,345,514).

Regarding claims 1 and 3, Goodrich et al. ("Goodrich") discloses a method of sorting out defect-free workpieces including checking dimensional characteristics to reject the workpieces not within a predetermined tolerance range (Col. 11, lines 11-31), thereby sorting out those which comply with the predetermined tolerance range. Goodrich discloses stacking and arraying the fed elements in a transverse direction thereof downstream (Figure 1). Goodrich discloses applying a gauge having a shape complementary to a required shape for a functional portion of the workpieces, to the workpieces which have been sorted out, and sorting out those workpieces whose functional portion has a shape complementary to the shape of the gauge, as defect-free workpieces (Col. 6, lines 15-25 and lines 39-44; Col. 9, lines 6-10 and lines 41-48). Goodrich discloses that it is well known to inspect a workpiece based on a video image (Col. 2, lines 5-9).

Goodrich discloses checking dimensional characteristics but does not disclose using a passage having a predetermined width to check the dimensional characteristics. However, Fowlkes discloses inserting workpieces into a passage having a predetermined width to sort out those workpieces which have passed through the passage (Figure 2; Figure 3a-d; Col. 4, lines 55-58; Col. 7, lines 56-67, Col. 8, lines 1-19). Goodrich and Fowlkes are combinable because they are from the same field of endeavor sorting out workpieces. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have modified the checking of dimensional characteristics to reject workpieces not within a predetermined tolerance range as disclosed by Goodrich to include using a passage having a predetermined width. The motivation for doing so would have been because it is a well known methodology and provides an alternative method to separate rejected parts from acceptable parts. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with either the dimensional characteristics check disclosed by Goodrich or the claimed passage because both provide a method of sorting out workpieces that do not meet the predetermined tolerance range. Therefore, it would have been obvious to combine Goodrich with Fowlkes. Goodrich discloses that it is well known to inspect a workpiece based on a video image (Col. 2, lines 5-9), but does not specify analyzing images of the workpieces to compare the images with a reference workpiece image. However, Mahdavieh et al. ("Mahdavieh") discloses analyzing respective images of workpieces to compare the images with a template or reference workpiece image, reject workpieces which have a portion different from the reference workpiece (Col. 5, lines 28-55), thereby sorting out other workpieces. Goodrich, Fowlkes, and Mahdavieh are combinable because they are from the same field of endeavor of defect detection. At the time of the

invention, it would have been obvious to a person of ordinary skill in the art to have modified the dimensionality check disclosed by Goodrich and Fowlkes to include comparing images of the workpieces to a reference image. The motivation for doing so would have been because it is a well known methodology routinely implemented in the art for the detection of defects in a workpiece. Therefore, it would have been obvious to combine Goodrich and Fowlkes with Mahdavieh to obtain the invention as specified in claims 1 and 3.

Regarding claims 2 and 4, Goodrich does not recognize converting images of the workpieces into respective binary images. However, Mahdavieh teaches that it is known to convert the images of workpieces into respective binary images each having a predetermined number of pixels in a unit area (Col. 5, lines 56-68), comparing the binary images with the reference workpiece image (Col. 6, lines 18-61), reject workpieces which have a portion different from the reference workpiece image (Col. 7, lines 48-65), and thereby sort out other workpieces. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the dimensionality check disclosed by Goodrich to further include comparing binary images of the workpieces to a reference image as taught by Mahdavieh because it facilitates the identification of any suspected defect regions (Col. 8, lines 42-48).

Regarding claim 5, Goodrich discloses detecting defects (Col. 9, lines 41-48), but does not recognize the defect being the portion different from the reference element image. However, Mahdavieh teaches that it is known to determine a defect as the portion different from the reference element image (Col. 5, lines 28-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the dimensionality check disclosed by Goodrich to further include comparing images of the workpieces to reference

images as taught by Mahdavieh because it is well known and provides for the detection of defects in a workpiece.

Regarding claim 6, Goodrich discloses detecting numerous defects (Col. 9, lines 41-48). While Goodrich does not specify a defect including an abrasive particle it would have been obvious in light of Goodrich's disclosure to include entrapped foreign matter such as an abrasive particle as a defect because it is well known and would provide further inspection against defects which may occur.

Regarding claims 7 and 8, Goodrich discloses detecting a partial broken-off region and a recess in a surface (Col. 9, lines 42-48).

Regarding claim 9, the arguments analogous to those presented above for claim 1 are applicable to claim 9. Fowlkes discloses that in the step of inserting workpieces that are smaller than the predetermined width are passed through the passage and workpieces that are larger than the predetermined width are rejected (Figures 3a-d).

Regarding claim 10, the arguments analogous to those presented above for claim 1 are applicable to claim 10. Fowlkes discloses that the workpieces that have passed through the passage to the feed path are analyzed, and the workpieces that are not rejected are passed through the feed path to the gauge (Figures 3a-d).

Allowable Subject Matter

4. Claims 11 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments filed 3/1/04 have been fully considered but they are not persuasive.

Summary of Applicant's Arguments: In order to adopt the claimed order it is necessary to first have a finding that the most frequent defect of the workpieces is profile deformation. The references lack a statement concerning the frequency of each type of defect, or statement concerning a priority order of each of the tests of the defects. Applicants request a reference that teaches it is well known to insert a workpiece into a passage in order to take predetermined width. It is improper to modify Goodrich's check of dimensional characteristics using a laser to include using a passage since a passage would not be as precise as the laser and therefore would not operate in the intended manner. Claim 3 recites elements stacked and bundles together. Neither of the reference discloses elements having a body and head joined to the body with a pair of recesses defined therebetween.

Examiner's Response: The applicant's invention (same as the prior arts' teachings) is directed to sorting out defect-free workpieces. Goodrich's tests are directed to profile deformation. It is further submitted that the claim language does not require any determination of the frequency of each type of defect. Fowlkes teaches that it is well known to insert

workpieces into a passage having a predetermined width to sort out those workpieces which have passed through the passage (Figure 2; Figure 3a-d; Col. 4, lines 55-58; Col. 7, lines 56-67, Col. 8, lines 1-19). The claim language does not provide any limitations on the precision of the passage having a predetermined width to sort out workpieces. In response to applicant's arguments, the recitation of the elements being stacked and bundled together in claim 3 has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Other Prior Arts Cited

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 3,625,357 to Ochs for damaged cap ejector; and

U.S. Pat. No. 5,388,707 to Stivison et al. for inspecting the exterior finish of containers.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virginia M Kibler whose telephone number is (703) 306-4072. The examiner can normally be reached on Mon-Thurs 8:00 - 5:30 and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Virginia Kibler
05/10/04

MEHRDAD DASTOURI
PRIMARY EXAMINER